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SITE SUMMARY FOR POLYCHLORINATED BIPHENYL DISPOSAL DRY DOCK AREA
ROOSEVELT ROADS SITE 9 NAVAL ACTIVITY PUERTO RICO
7/25/1993
VERSAR, INC.



**SITE SUMMARY FOR PCB DISPOSAL-DRY DOCK AREA,
ROOSEVELT ROADS
(SITE NO. 9)**

Prepared for:

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Versar Job No. 5295.3

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SITE SUMMARY FOR PCB DISPOSAL-DRY DOCK AREA, ROOSEVELT ROADS (Site No. 9)

INTRODUCTION

The U.S. Naval Facilities Engineering Command (NAVFACENGCOM), Atlantic Division has contracted Versar, Inc. to provide environmental services to the Naval Station (NAVSTA) Roosevelt Roads, Puerto Rico. As part of these services, Versar has prepared site summaries for Site 9, PCB Disposal-Dry Dock Area, and other sites at NAVSTA Roosevelt Roads. This site summary has been developed based on the findings of the Initial Assessment Study (IAS) prepared by Greenleaf/Telesca (1986), and Confirmation Study prepared by Environmental Science and Engineering (1988).

This site summary has been prepared to highlight the results of previous investigations, briefly discuss fate and transport potential of site contaminants, and determine the need for further investigation, if warranted. If no further action is required for the protection of human health and the environment, the summary is intended to serve as part of the Navy's decision document to support the no action alternative.

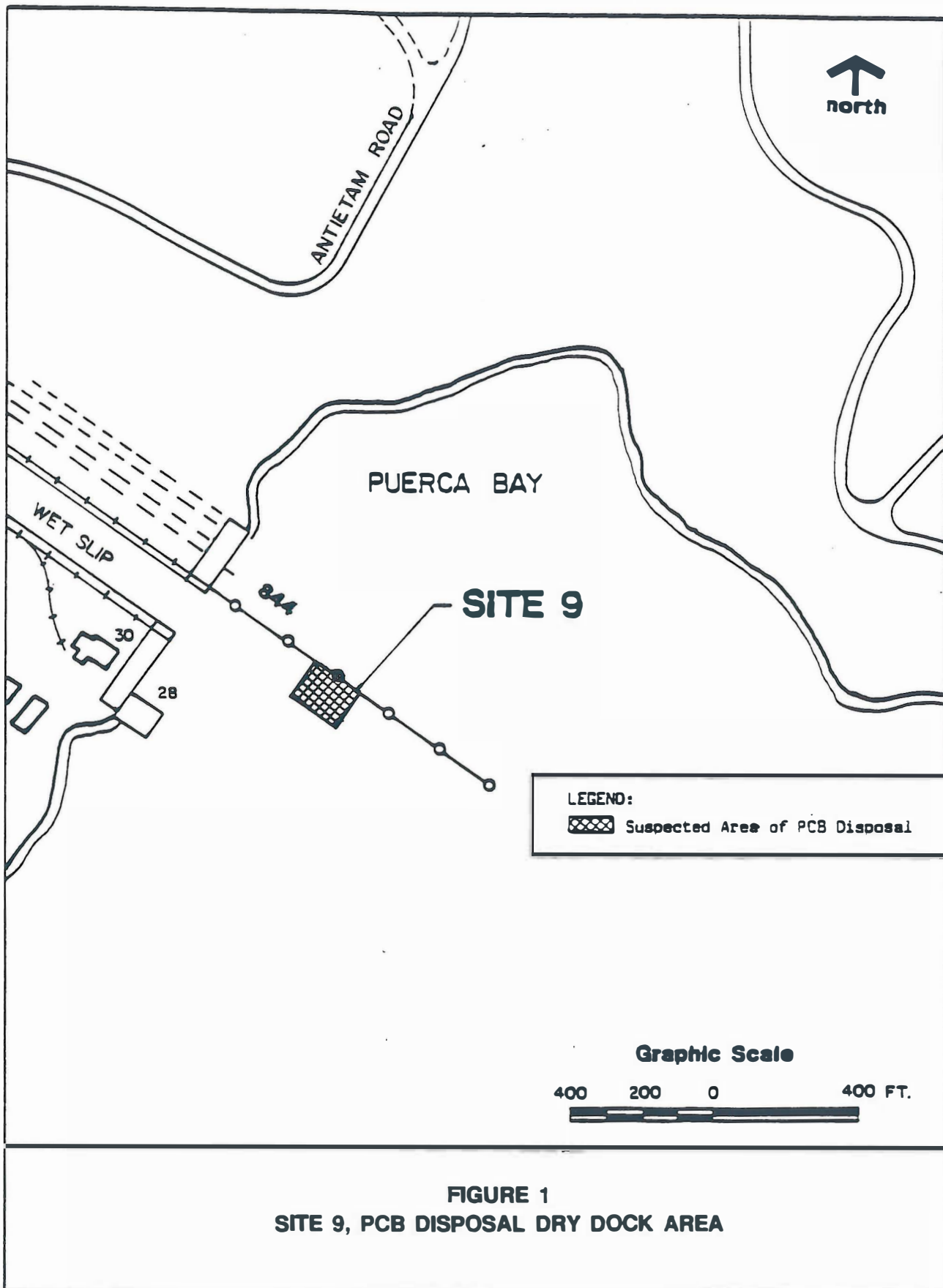
BACKGROUND

In approximately 1968, 25 5-gallon cans containing Askarel (a PCB dielectric fluid) were reportedly disposed of by dropping them into Puerca Bay off the south side of the wharf at the dry dock (Figure 1). Some of the cans, which had been stored in Public Works Building 31, were in a rusty condition at the time of the disposal.

The site is located in an area designated as critical habitat for the Caribbean Manatee, and is also a known habitat for several Commonwealth and federally designated rare and endangered species, including several species of sea turtles. Potential receptors of PCB contamination from this site also include infaunal and sessile benthic organisms (polychaetes, corals, bivalves, clams, and annelides), predators of benthic organisms (fish), and ultimately the people who use the wharf for recreational fishing.

CONFIRMATION STUDY

A Confirmation Study was recommended for this site based on the conclusions of the IAS. A visual and magnetometer survey did not reveal the presence of 5-gallon cans or magnetic anomalies. Therefore, a randomized sediment sampling program was conducted to determine if PCBs were present or had been dispersed by tidal currents.





A sampling grid pattern measuring the length of the wharf (approximately 1,000 feet) by 25 feet to each side of the wharf was designated, and samples taken on a 10-foot grid to a depth of two feet. Five hundred hand-augered sediment samples were collected; two percent were selected at random for analyses. The remaining samples were held pending the results of the first analysis for PCBs.

The sampling was conducted starting at the assumed disposal point (the third stanchion from the shoreline) and working out to the ends of the wharf. The sediment cores were visually inspected for the presence of oily material or metal fragments; those samples containing this material were to be analyzed for PCB. No samples showed metal fragments or oily material. Therefore, a minimum of 2 percent of the samples were randomly selected and analyzed. Four surface water samples were also collected.

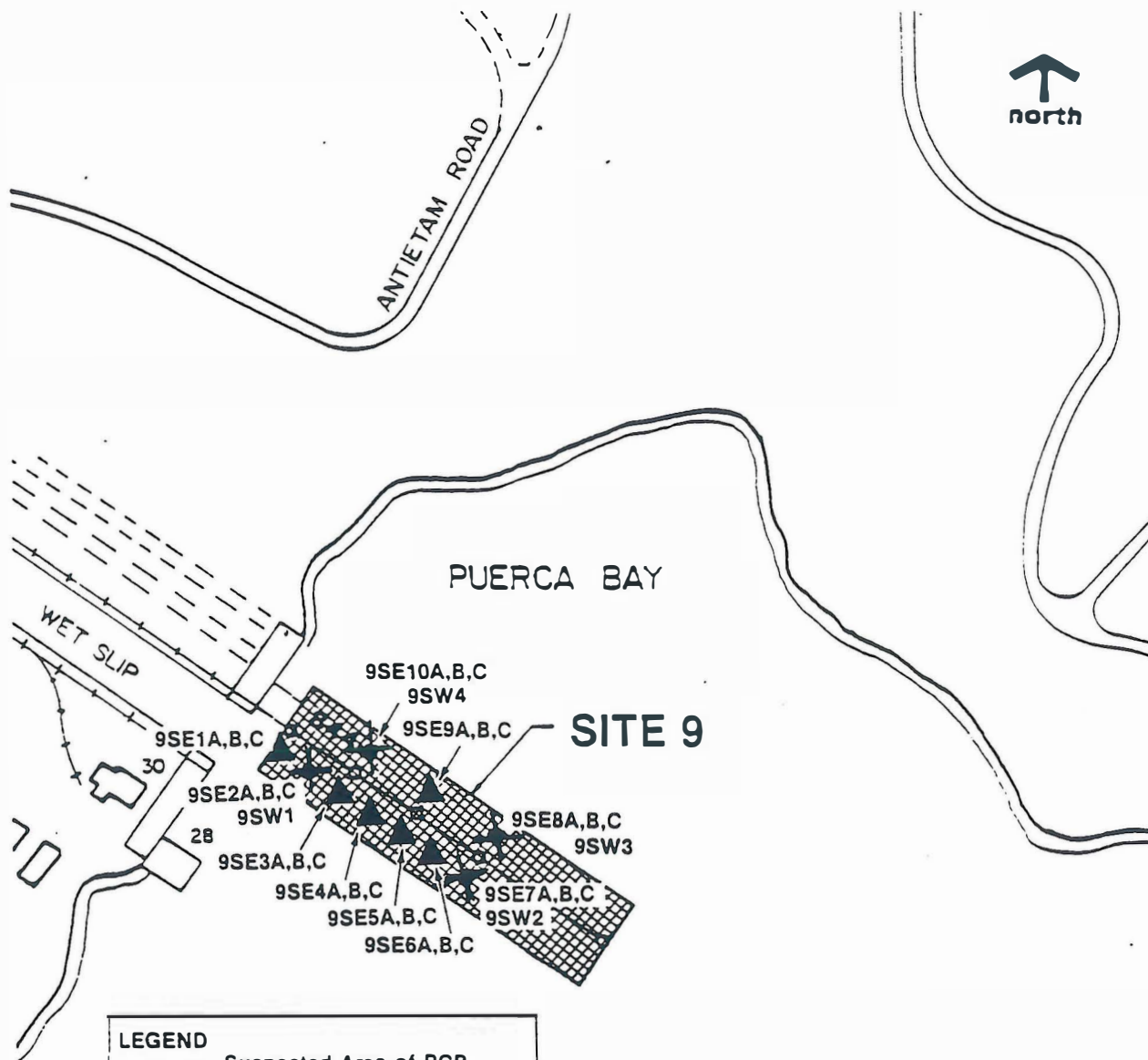
RESULTS

A visual inspection of the bottom of Puerca Bay directly adjacent to the pier in the dry dock area failed to locate any of the 5-gallon metal cans, which had been reportedly dropped in the water. Only metal and glass drink containers were found on the bottom, along with other miscellaneous metal scrap.

Because none of the 5-gallon metal cans allegedly disposed were located, the investigation proceeded using the randomized sampling program. Two sediment samples were also collected on both sides of the pier's third stanchion where the disposal reportedly took place. Surface water and sediment samples were collected at the site for PCB analysis. Figure 2 shows the sampling locations. No PCBs were detected in any of the surface water or sediment samples that were analyzed.

CONCLUSIONS

Because no PCBs were detected in any of the surface water and sediment samples analyzed for Site 9, no additional sampling and analysis was recommended by ESE (1988). Versar concurs with the recommendation for no further action. Assuming the reports of PCB disposal were correct, the cans apparently sank into soft sediment or were later buried by sediment. Because of the low solubility of PCBs in water, no migration is anticipated. Additionally, the ESE sampling indicated that the PCBs have not been dispersed from the area along the wharf where the cans were reportedly disposed. If present in the sediment adjacent to the wharf, the PCBs seem to be isolated from the surrounding environment and are not migrating. Under present conditions, the potential for environmental damage resulting from the alleged PCB disposal does not appear to present a risk to human health and the environment. PCBs strongly adsorb to sediment particles.



LEGEND

Suspected Area of PCB Disposal and Possible Dispersal

Sediment Sample

Sediment and Surface Water Sample

Recommended Sampling Plan:

1. Visual
2. Sediment Core Sampling as Shown
3. Composite Sample from 0- to 1- Foot Depth, 1- to 2- Foot Depth, and 2- to 3- Foot Depth at Each Boring

Graphic Scale

400 200 0 400 FT.



SOURCES: NEESA, 1984b; ESE, 1985.

FIGURE 2
SAMPLING LOCATIONS AT SITE 9,
PCB DISPOSAL, DRY DOCK AREA



CONFIRMATION STUDY
U.S. NAVAL COMPLEX
PUERTO RICO



There is relatively little activity (construction, etc.) in the area that would be expected to resuspend the sediment, except dredging activities. With time and additional deposition of sediment, the cans, if actually present, would be further isolated from the environment.

Because dredging activities could potentially disturb the disposal location and mobilize PCB-contaminated sediment, NAVSTA Roosevelt Roads should seriously consider such an effect in any future plans for the area. While no remediation is warranted under the current conditions, some institutional controls to limit dredging activities near the site should be adopted.



REFERENCES

Environmental Science and Engineering, 1988. Confirmation Study to Determine Possible Dispersion and Migration of Specific Chemicals. U.S. Naval Station Roosevelt Roads, Puerto Rico, and U.S. Naval Ammunition Facility Viques: prepared for Atlantic Division, Naval Facilities Engineering Command, Norfolk, Virginia. (Navy Contract No. N62470-85B-7972).

Greenleaf/Telesca Planners, Engineers, and Architects. 1986. Initial Assessment Study, Naval Station Roosevelt Roads, Puerto Rico: prepared in conjunction with Ecology and Environment, Inc. for U.S. Naval Energy and Environmental Support Activity (Navy Contract No. N62474-82C-C357).



APPENDIX

ANALYTICAL RESULTS (ESE, 1988)

PROJECT NUMBER 85275 3000
 FIELD GROUP PRSW1
 NAVPCW

PROJECT NAME PUERTO RICO CONFIRMATION STUDY
 PROJECT MANAGER RUSS BOWEN
 LAB COORDINATOR LISA BARE

SAMPLE ID/#

PARAMETERS	UNITS	STORET # METHOD	9SW1 PRSW1 17	9SW2 PRSW1 18	9SW3 PRSW1 19	9SW4 PRSW1 20
DATE			12/02/85	12/02/85	12/02/85	12/02/85
TIME			08:30	08:45	09:30	10:00
PCB-1016	UG/L	34671 0	<0.206	<0.206	<0.206	<0.206
PCB-1221	UG/L	39488 0	<0.430	<0.430	<0.430	<0.430
PCB-1232	UG/L	39492 0	<0.333	<0.333	<0.333	<0.333
PCB-1242	UG/L	39496 0	<0.286	<0.286	<0.286	<0.286
PCB 1248	UG/L	39500 0	<0.197	<0.197	<0.197	<0.197
PCB-1254	UG/L	39504 0	<0.224	<0.224	<0.224	<0.224
PCB-1260	UG/L	39508 0	<0.358	<0.358	<0.358	<0.358

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PROJECT MANAGER RUSS BOWEN
LAB COORDINATOR LISA BARE

PARAMETERS	STORET # UNITS METHOD	SAMPLE ID/#														
		9SE1A PRSEI 20	9SE1B PRSEI 21	9SE1C PRSEI 22	9SE2A PRSEI 23	9SE2B PRSEI 24	9SE2C PRSEI 25	9SE3A PRSEI 26	9SE3B PRSEI 27	9SE3C PRSEI 28	9SE4A PRSEI 29	9SE4B PRSEI 30	9SE4C PRSEI 31	9SE5A PRSEI 32	9SE5B PRSEI 33	9SE5C PRSEI 34
DATE TIME		12/02/85 09:40	12/02/85 09:40	12/02/85 09:40	12/02/85 10:00	12/02/85 10:00	12/02/85 10:00	12/02/85 10:20	12/02/85 10:20	12/02/85 10:20	12/02/85 10:40	12/02/85 10:40	12/02/85 10:40	12/02/85 11:00	12/02/85 11:00	12/02/85 11:00
PCB 1016, SED UG/G-DRY	98140 0	<1.16	<1.70	<1.58	<1.92	<1.75	<1.58	<2.04	<1.87	<2.26	<2.26	<1.74	<1.43	<2.30	<1.76	<1.75
PCB-1221, SOIL UG/G-DRY	98351 0	<1.16	<1.70	<1.58	<1.92	<1.75	<1.58	<2.04	<1.87	<2.26	<2.26	<1.74	<1.43	<2.30	<1.76	<1.75
PCB-1232, SOIL UG/G- DRY	98352 0	<1.16	<1.70	<1.58	<1.92	<1.75	<1.58	<2.04	<1.87	<2.26	<2.26	<1.74	<1.43	<2.30	<1.76	<1.75
PCB-1242, SOIL UG/G-DRY	98353 0	<1.16	<1.70	<1.58	<1.92	<1.75	<1.58	<2.04	<1.87	<2.26	<2.26	<1.74	<1.43	<2.30	<1.76	<1.75
PCB1254-SOIL UG/G- DRY	98354 0	<1.16	<1.70	<1.58	<1.92	<1.75	<1.58	<2.04	<1.87	<2.26	<2.26	<1.74	<1.43	<2.30	<1.76	<1.75
PCB-1248 SOIL UG/G-DRY	98802 0	<1	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<1	<2	<2	<2
PCB 1260, SED UG/G-DRY	98139 0	<1.16	<1.70	<1.58	<1.92	<1.75	<1.58	<2.04	<1.87	<2.26	<2.26	<1.74	<1.43	<2.30	<1.76	<1.75
MOISTURE %WET WT	70320 0	48.1	41.0	36.8	48.0	42.8	36.9	50.9	46.5	55.7	55.7	42.7	30.0	56.4	43.1	42.7